Space Weather Forecast

Issued on Wednesday, 03 April 2024 at 01:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Active to G1 Minor Storm intervals likely into Day 1 (03 Apr) due to the expected arrival of faster solar winds.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity has been Very Low with no significant solar flares. There are two main simple sunspot regions now on the disc. Very little activity on the current disk although signs of approaching regions beginning to round the eastern limb. These will be assessed as and when they become clearer.

No Earth-directed CMEs were observed in available imagery.

Solar Wind / Geomagnetic Activity: Ongoing weak fast wind conditions were observed. Solar wind speeds were generally steady at slightly elevated levels of around 420-480km/s. Total Interplanetary Magnetic Field (IMF), Bt was fairly steady at weak levels. The important north-south component, Bz, varied weakly. Geomagnetic activity was Quiet to Unsettled (Kp1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Very Low activity is expected, but with a slight chance of isolated Moderate flares maintained given the unknown risk presented by approaching regions, this increasing by the end of the period.

Solar Wind / Geomagnetic Activity: There are no Earth-directed coronal mass ejections (CMEs) currently forecast.

Current slightly elevated wind speeds look like to remain generally steady before the onset of a likely stronger solar wind from two coronal holes expected later into Day 1 (03 Apr) with any enhancement expected to continue through Day 2 (04 Apr), perhaps gradually easing by Day 3 (05 Apr).

Geomagnetic activity is forecast to be initially Quiet on Day 1 but increasing into the day to become generally Active with a chance of G1 Minor Storm intervals due to the fast wind onset, this perhaps persisting into early Day 2, before gradually easing to Quiet to Unsettled with a chance of Active intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain near background levels.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	50	30	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	15	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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